

Claims

1. A flow measuring device comprising a housing in which a principal flow duct extends in which a pressure drop producing means producing a pressure drop in the medium flowing through is located and on whose duct wall the tapping openings of a plurality of tapping ducts connected with a flow ascertaining means arranged in or on the housing, are provided, wherein the principal flow duct, including the pressure drop producing means and the tapping openings, is a component of a sleeve-like duct insert inserted into a socket in the housing coaxially, the tapping ducts being composed of housing duct sections extending in the housing and opening at the inner face of the socket and of duct sections which extend in the wall of the duct insert and open at the outer face of the duct insert, the inner face of the socket and the outer face of the duct insert being designed as interfaces ensuring a correctly associated fluid link between the duct sections in the housing and in the insert.

2. The flow measuring device as set forth in claim 1, wherein the duct insert is in the form of an inserted part.

3. The flow measuring device as set forth in claim 1, comprising detent means for the detachable fixation of the duct insert, inserted into the socket, in relation to the housing.

4. The flow measuring device as set forth in claim 3,

wherein the duct insert is multiply slotted at a front end thereof, a plurality of radially resiliently elastic detent arms being formed, which in the mounted state of the duct insert cooperate with the housing to form a
5 releasable catch.

5. The flow measuring device as set forth in claim 1, comprising positioning means formed on the housing and on the duct insert, which are able to make interlocking
10 engagement with one another for setting a predetermined angle position of the duct insert.

6. The flow measuring device as set forth in claim 1, comprising abutment means provided on the housing and on
15 the duct insert for setting the insertion depth of the duct insert.

7. The flow measuring device as set forth in claim 1, wherein the pressure drop producing means are constituted
20 by a duct section whose cross section is tapered in the flow direction of the pressure medium.

8. The flow measuring device as set forth in claim 1, wherein at least one tapping duct possesses a plurality of
25 tapping openings distributed at the same axial level in the peripheral direction about the duct periphery, such tapping openings communicating jointly with an annular groove formed on the outer periphery of the duct insert.

9. The flow measuring device as set forth in claim 1, wherein the duct insert is able to be inserted selectively
30 in two opposite longitudinal directions in order to render possible flow measurement in both directions of flow of the pressure medium.

10. The flow measuring device as set forth in claim 9, wherein the duct insert is able to be inserted from opposite ends into the socket.

5 11. The flow measuring device as set forth in claim 9, wherein in the wall of the duct insert two duct sections contained in the insert extend, which at axially spaced points open into the principal flow duct and which respectively communicate with an annular groove formed at
10 the outer periphery of the duct insert, and wherein three sections of the tapping ducts in the housing communicate on the one hand with the flow ascertaining means and on the other hand open at axially spaced points into the
15 socket, the interfaces on either side being so designed that a first section of the duct sections in the insert communicates, irrespectively of the longitudinal
 orientation of the duct insert with a first duct section in the housing, whereas the second duct section in the
20 insert communicates with the second or with the third duct section in the housing dependent on the longitudinal orientation of the duct insert.

 12. The flow measuring device as set forth in claim 11, wherein the duct insert possesses sealing means at the
25 outer periphery, which by virtue of cooperation with the inner periphery of the socket seal off the second or third duct section in the housing presently not communicating with a duct section in the housing.

30 13. The flow measuring device as set forth in claim 11, wherein the annular grooves are flanked axially on either side by a sealing ring concentrically surrounding the duct insert,

35 14. The flow measuring device as set forth in claim

13, wherein the duct sections in the insert at least partly respectively possess two connection openings provided on the outer periphery of the duct insert, such connection openings being so placed at different positions that one and the same duct section in the housing communicates, in accordance with the longitudinal orientation of the duct insert, either with the one or with the other connection opening.

15. The flow measuring device as set forth in claim 14, wherein one of the two connection openings is radially flush with the associated tapping opening.

16. The flow measuring device as set forth in claim 14, wherein the two connection openings are connected together by a groove-like connecting duct formed at the outer periphery of the duct insert.

17. The flow measuring device as set forth in claim 16, wherein each groove-like connecting duct is surrounded by a seal secured on the duct insert.

18. The flow measuring device as set forth in claim 1, designed as a component of a compressed air servicing device or of another fluid power device.

19. The flow measuring device as set forth in claim 1, comprising a plurality of duct inserts able to be alternatively put in the socket, such duct inserts having different specifications.

20. The flow measuring device as set forth in claim 19, wherein the different duct inserts are individualized by color codes or other distinguishing insignia.